

 TechnipFMC		 IndianOil		PROJECT		Standby SRU & Additional Tanks	
				CLIENT		INDIAN OIL CORPORATION LIMITED	
DATA SHEET		Project NO. 080557C001		Document No. 080557C-088-SP-0810-010		Rev. No. A	
						Page 1 of 7	
DATA SHEET SRU (088) BLOWDOWN DRUM 088-V-010							
A	29-Nov-2019	ISSUED FOR DESIGN	KSK	KH	MSS	JMC	
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED	

This document contains information which is the property of Indian Oil Corporation Ltd.

It shall not be used for any purpose other than that for which it is supplied.

CONFIDENTIAL – Not to disclose without Authorization

 	PROJECT	Standby SRU & Additional Tanks IOCL- Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
DATA SHEET	Project No. 080557C001	Document No. 080557C-088-SP-0810-010	Rev. No. A	Page 2 of 7

The following notes to be considered for :

PDRP4220-8430-DS-087-2024 (088-V-010 : Equipment Datasheet for Blowdown Drum)

General Notes

1. Information shown below supersedes the information indicated in the following pages.
2. This document shall be read along with IOCL Specifications, Technip Specifications & FWEL Specifications.
3. Wherever "IOCL" is mentioned inside FWEL document, the same shall be read as PMC.
4. Wherever "Vendor" is mentioned, same shall be read as CONTRACTOR & VENDOR.
5. All dimensions in mm unless specified otherwise.
6. All thicknesses specified on the drawing / sketch are minimum after forming and machining. The LSTK contractor / Detail Engineering Contractor (DEC) shall be responsible for detail design.
7. All Nozzle sizes, Projections, Elevations, Locations are preliminary and to be finalized during detail design.
8. Flange ratings shall also be checked for impact due to loads from connected piping & shall be increased, if required. See code requirements .
9. All removable Internals shall be designed to pass through Manhole.
10. All carbon steel material shall be in killed quality.
11. SS316 spiral wound gasket with graphite filler, SS316 inner ring & CS outer ring shall be used as gasket material.
12. Local load analysis for process nozzles shall be carried out as per WRC 107 / 297 or FEA.
13. Skirt Height and Anchorage are preliminary. 4.6 type anchor bolt considered. To be finalized by DEC.
14. For Additional Technical Requirements, refer other specifications in ITB.

Specific Notes for 088-V-010.

15. Quantity : ONE.
16. Butt weld seams shall be fully radiographed.
17. Refer Painting specification for details of surface preparation and Painting.
18. Nozzle reinforcement : All nozzle openings shall be completely reinforced including those openings in skirt.
19. All openings $\geq 20''$ NB shall also be verified as per Appendix 1-7 of the Code.
20. All Pressure part and non-pressure part material shall be as per ASME. ASTM material is not to be used. Wherever ASTM is specified in this document, the same to be read as ASME.



EQUIPMENT DATA SHEET
 PRESSURE VESSEL

088-V-010

PDRP4220-8430-DS-087-2024

PRESSURE VESSEL
 BLOWDOWN DRUM
 088-V-010

(*) - TO BE CONFIRMED LATER
 (**) - TO BE CONFIRMED BY CONTRACTOR

Note: This MDS is based on Process Datasheet No. PDRP4220-8110-PS-086-0012, Rev. 01.

Indian Oil Corporation Limited (IOCL)
 Paradip Refinery Project (PDRP)
 Paradip, Orissa State, India
 Contract No: ~~1 14 4200/4399~~

			<i>Paul McNeil</i>	<i>Ian G Brown</i>	<i>Kevin Gallacher</i>
F1	9-Oct-09	Issued for Enhanced Design	Paul McNeil	Ian G Brown	Kevin Gallacher
A1	14-Aug-09	Issued for design	Sunil Gaba	Manoj Dash	J P Biswas
Rev	Date	Description	Orig By	Checked By	Approved

FOSTER WHEELER ENERGY LIMITED

PRESSURE VESSEL

DATA SHEET

TECHNIPFMC DOC. NO : 080557C-088-SP-0810-0010
 REV. NO : A
 PAGE NO. : 4 / 7

Item Number **088-V-010**

DESIGN DATA

Number of Units		ONE	
Contents		Shell	Jacket / Coil
Toxic / Lethal (Yes / No)		STEAM	N/A
Sour Service (Yes / No)		No	-
Cyclic Service (Yes / No)		No	-
Design Pressure (Internal / External)	Kg/cm2(g)	7.0 / F.V	Note 4.4
Design Temperature (Max / Min)	°C	240	10
Operating Pressure (Internal / External)	Kg/cm2(g)	1.4	-
Operating Temperature (Max / Min)	°C	126	-
Hydrotest Pressure (Site Corroded / Shop New)	Kg/cm2(g)	Per Code / Spec	-
Minimum Design Metal temperature	°C	10	-
Contents S.G.	-	0.95	-
Corrosion Allowance (Internal / External)	mm	Note 4.10	-

MECHANICAL DATA

Layout			Loads		
Vertical / Horizontal	-	Vertical	Basic Wind Speed	m/s	65
Vessel Diameter	mm	1200 ID	Basic Wind Pressure	Kg/m ²	Per IS 875
Tan / Tan	mm	2450	Earthquake Factor	-	Note 4.9
Height of BTL	mm	1500 (HOLD)	Base Shear	kgf	2450 (Note 4.7)
Type of Heads		2:1 Ellipsoidal	Base Moment	kgf-m	5000 (Note 4.7)
Shell Thickness	mm	10	AGITATOR		
Head Thk (top/bottom)	mm	-8	Download	kg	-
Type of Supports	-	Skirt	Torque	kg-m	-
Insulation Thickness	mm	25	Bending Moment	kg-m	-
Insulation Type	-	PP	WEIGHT		
Fireproofing		(**)	Shipping	kg	2300
Vessel Volume	m ³	3.22	Empty (Shop Fabricated)	kg	3,500
Liquid Volume	m ³	1.19	Operating	kg	10,300
Jacket / Coil volume	m ³	-	Hydrotest (at site)	kg	12,400
Heat Transfer Area	m ²	-	Internals	kg	-

MATERIAL DATA (SEE NOTE.20)

Shell	ASTM A 516 Gr 70N	Bolts (external)	ASTM A 193 Gr B7
Heads	ASTM A 516 Gr 70N	Nuts (external)	ASTM A 194 Gr 2H
Coil Shell	-	Bolts (internal)	-
Jacket / Coil Head	-	Nuts (internal)	-
Nozzle Flanges	ASTM A 105N	Gaskets (external)	Note 4.8
Nozzle Necks	ASTM A 106 Gr B	Gaskets (internal)	-
Nozzle Pads	ASTM A 516 Gr 70N	Internals	ASTM A 516 Gr 70N
Girth Flanges	-	Internal Pipe	ASTM A 106 Gr B
Skirt (Upper)	ASTM A 516 Gr 70N	Internal Flanges	-
Skirt (Lower) / Basing	SA 516 GR 70	Shell Clad or Overlay	-
Insulation Supports	ASTM A 516 Gr 70N	Head Clad or Overlay	-
Stiffening Rings	-	Internal Supports	-
Platform Clips (If Any)	ASTM A 516 Gr 70N	Vortex Breaker	ASTM A 516 Gr 70N
Tailing Lugs	SA 516 GR 70	Wear Plate	-
Lifting Lugs	ASTM A 516 Gr 70	Elbow	ASTM A 234 WPB

WELDED EXTERNALS : SA 516 GR 70N

BLOWDOWN DRUM

DATA SHEET (PRESSURE VESSEL)

DOC No. : PDRP4220-8430-DS-087-2024

Rev F1

Page 2 of 5

FOSTER WHEELER ENERGY LIMITED

PRESSURE VESSEL

DATA SHEET

TECHNIPFMC DOC. NO : 080557C-088-SP-0810-0010
REV. NO : A
PAGE NO. : 5 / 7

Item Number **088-V-010**

FABRICATION / INSPECTION

Design Code	ASME SEC VIII DIV 1- ED 2019+IBR	NDE	
Additional Specification	080557C-088-JSD-0400-001	Radiography	FULL
Code Stamp	N/A	Magnetic Particle	Per Code & Specs
Stress Relieving	(For both Heads)	Dye Penetrant	Per Code & Specs
Other Heat Treatment	Per code / Specs	Ultrasonic	Per Code & Specs
Surface finish (internal)	Clean and Dry	Gas Leak Testing	N/A
Surface finish (external)	REFER PAINTING SPECIFICATION	PMI	Per Specs
Painting	REFER PAINTING SPECIFICATION	Other NDE	Per Code & Specs
Lining	N/A	Hardness Tests	Per Code & Specs
		Impact Tests at	Per Code & Specs

Rev

F1

F1

Specified Flange Rating is indicative. However Contractor/Vendor to verify the adequacy for connected piping Loads.

NOZZLE SCHEDULE

Nozzle	No. off.	Service	NB mm	Rating (#)	Flange	Finish	Stand -out	Elevat -ion	Note	
Process Nozzles										
N1	1	HP BLOWDOWN INLET	250	150(**)	RFWN	125 to 250 AARH	810	2000	W/ DEFLECTOR	F1
N2	1	LP BLOWDOWN INLET	80	150	RFWN		810	1700	W/ DEFLECTOR	F1
N3	1	LIQUID OUTLET	80	150	RFWN		BY VENDOR	-600	W/ VORTEX BREAKER	F1
N4	1	VENT TO ATM	200	150	RFWN		BY VENDOR	SEE SKETCH		F1
N5	1	OVERFLOW TO SEWER	80	150	RFWN		810	900	W/ DIP LEG	F1
N6	1	DRAIN	50	150	RFWN		BY VENDOR	SEE SKETCH		F1
N7	1	VENT	50	150	RFWN		BY VENDOR	SEE SKETCH		F1
N8A/B	1 2	RELIEF VALVE	200	#300	RFWN		BY VENDOR	SEE SKETCH		F1
N9	1	PRESSURE TRANSMITTER	50	#300	RFLWN		810	2000		F1
Manways										
M1	1	MANWAY	600	150	RFWN	125 to 250 AARH	BY VENDOR	750	Note 3.2	F1
Instrument Nozzles										
L1 A/B	2	LEVEL GAUGE	50	300	RFLWN	125 to 250 AARH	810	SEE SKETCH		F1
L2 A/B	2	LEVEL TRANSMITTER	50	300	RFLWN		810	SEE SKETCH		F1
Skirt Openings										
SA	1	SKIRT ACCESS	500 ID					-080 HOLD		F1
SV 1~4	4	SKIRT VENT	100					-330		F1

Notes

- Standout for nozzle in shell shall be from vessel C.L to flange face and for nozzles in head shall be from tan line to flange face.
- C/W blind, gaskets, bolting and davit.
- Provide adequate skirt opening for nozzle N3.
- All instrument paired nozzles to be Jig-Set.

BLOWDOWN DRUM

DATA SHEET (PRESSURE VESSEL)

DOC No. : PDRP4220-8430-DS-087-2024

Rev F1

Page 3 of 5

FOSTER WHEELER ENERGY LIMITED

PRESSURE VESSEL

DATA SHEET

TECHNIPFMC DOC. NO : 080557C-088-SP-0810-0010
 REV. NO : A
 PAGE NO. : 6 / 7

Item Number **088**-V-010

VESSEL DESIGN NOTES

Rev

- 4.1) Flange bolts to straddle the vessel **080557C-088-JSD-0400-001**
- 4.2) All dimensions are in millimetres unless otherwise stated.
- 4.3) All dimensions are from reference tangent line, unless otherwise indicated.
- 4.4) Vessel shall be designed for full vacuum (FV) @ 175° C.
- 4.5) Design Pressure excludes static head of liquid. Vendor to calculate based on maximum liquid level and Specific gravity and incorporate into design calculations.
- 4.6) Anchor Bolt holes shall straddle the North/ South centrelines unless otherwise indicated.
- 4.7) The thicknesses, weights **and loads are shown** for estimation purposes only. Vendor shall calculate and confirm. Thicknesses shown are the minimum acceptable to IOCL. Vendor is responsible for complete mechanical design.
- 4.8) Gaskets: Spiral wound graphite filled gasket with type ~~304 SS~~ or 316 SS windings with ~~304~~ 316 SS inner ring and carbon steel outer ring conforming to ASME B16.20.
- 4.9) ~~See clause 3.9 of Doc. No. PDRP-8820-SP-0001.~~ Refer Specification 080557C-088-JSD-0400-001 for details.
- 4.10) Corrosion allowance
 - a) for vessel 3 mm
 - b) for Skirt Supp. 1.5 mm
- 4.11) Provide 15mm weep hole to prevent Siphon effect.
- 4.12) Vessel to be certified per Indian Boiler Regulation.

F1

F1

F1

USED ABBREVIATIONS

FV = Full vacuum, N/A = Not Applicable, NB = Nominal Bore, RF = Raised Face, IBR = Indian Boiler Regulations
 FF = Flat Face, RTJ = Ring Type Joint, SO = Slip On, WN = Weld Neck, LWN = Long Weld Neck, SR = Self Reinforced,
 LJ = Lap Joint, PWHT = Post Weld Heat Treatment, PT = Penetrant Testing, MT = Magnetic Testing,
 UT = Ultrasonic Testing, RT = Radiography Testing,
 HC = Heat Conservation, PP = Personnel Protection, VTA = Vendor to Advise.

BLOWDOWN DRUM

DATA SHEET (PRESSURE VESSEL)

DOC No. : PDRP4220-8430-DS-087-2024

Rev F1

Page 4 of 5

FOSTER WHEELER ENERGY LIMITED

PRESSURE VESSEL

DATA SHEET

TECHNIPFMC DOC. NO : 080557C-088-SP-0810-0010
 REV. NO : A
 PAGE NO. : 7 / 7

Item Number **088-V-010**

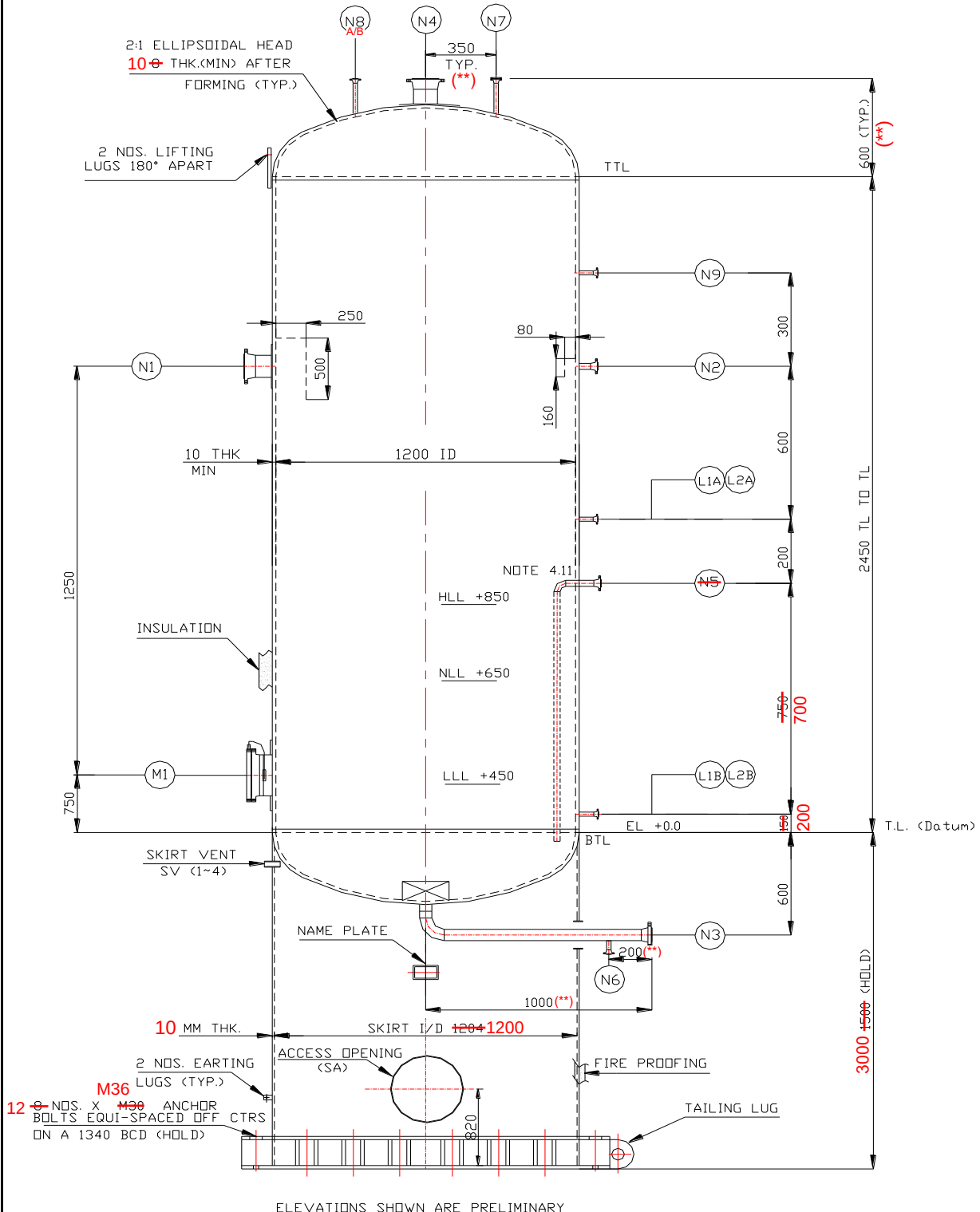
VESSEL SKETCH

Rev

F1

F1

F1



BLOWDOWN DRUM

DATA SHEET (PRESSURE VESSEL)

DOC No. : PDRP4220-8430-DS-087-2024

Rev F1

Page 5 of 5